STATE OF UTAH
NATURAL RESOURCES
Oil, Gas & Mining

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May 13, 1988

Mr. Gerald Schurtz
Manager Environmental Engineering
Kennecott Explorations (Australia) Ltd.
P. O. Box 11248
Salt Lake City, Utah 84147

Dear Mr. Schurtz:

RE: Mining and Reclamation Plan Review, M/035/009, Barneys Canyon Project, Salt Lake County, Utah

The Division has completed the engineering, soils, and revegetation review of your April 15, 1988 response to our first review. The hydrology review of the April 15, 1988 response and of the supplemental hydrologic data submitted May 9, 1988 is in progress. We anticipate completing the hydrology review within another ten days. It is suggested that you wait until the hydrology review is forwarded to you before responding to the concerns identified in this letter.

In general, the revised plan will allow for better reclamation than was originally proposed. Our remaining concerns center primarily around the limited amount of reclamation which is proposed for the Mel-Co waste dumps. These concerns are detailed below.

Topsoil Management, Section 3.9 Page 83

The plan indicates that an annual seed mix will be used for the protective seeding of topsoil stockpiles. We recommend that a perennial seed mix consisting of species to be used at final reclamation be also incorporated into the stockpile seed mix.

Overburden Disposal, Section 3.10, pages 84-86

The geotechnical investigation by Sergent Hauskins,and Beckwith reported two locations at the Barney's Canyon waste dump site that might be old landslides. A thorough investigation was not made of these areas due to the snow cover. A second reconnaissance of the area should be performed and the waste dump plan modified if the areas prove to be unstable.

Evaluation of Materials Toxicity, Section 3.11, Pages 86-90.2

The reclamation plan states that the sulfide waste material from the Mel-Co pit will be evenly distributed with the other waste material during deposition. This may indeed be true, but it is not readily verifiable. It is recommended that a sampling program be implemented to insure that sulfide waste material is not concentrated on any of the dump surfaces. This is especially important for nontopsoiled areas that cannot be accessed easily with earthmoving equipment.

The Division will require that the levels of sodium cyanide and sodium hydroxide are reduced to acceptable levels before final reclamation of the leach pads and ponds. An explanation of the sampling procedure to be used to evaluate cyanide levels during decommissioning must be provided to the Division.

Critical Wildlife Habitats, Section 4.4, Page 104

The Utah Division of Wildlife Resources has expressed concern over the impact that the mine operation will have on the resident deer and elk populations. The plan should address this subject in more detail, especially with regard to mitigation of adverse affects.

Soils and Revegetation, Sections 5.4 -5.8, Pages 110-118

The proposal to base topsoiling of the Mel-Co dumps on future revegetation test plots is unacceptable. We will require a committment to placing one foot of soil over all areas that have slopes of 2h/1v or less. We encourage you to implement revegetation test plots and we would be happy to assist you in developing them. The reclamation plan can be amended at a later date if the test plots show that less than one foot of soil cover is needed for successful revegetation.

The plan calls for the hydroseeding of the steeper areas upon final reclamation. We recommend that hydroseeding be performed in two steps. The fertilizer and approximately two thirds of the seed should be applied first. The hydromulch and the remaining seed should be applied afterwards.

The proposal to leave the Mel-Co 7100 and 7200 dump slopes at the angle of repose and without topsoil is discussed under Sections 6.2, 6.5 and 6.7.

Variance Request - Highwalls, Section 6.3, Page 125

A variance to leave pit high walls at 47 degrees is granted. Topsoiling and revegetation variances for the pits will be addressed in the hydrology review in conjunction with the request for an impoundment variance.

Variance Requests, Section 6.2, 6.5 and 6.7, Pages 124-127

The reclamation plan proposes to leave approximately 25 acres of dump outslopes at the Mel-Co area without benches and at the angle of repose. The areas would be hydroseeded, but not topsoiled. The maximum slope length would be 600 feet and the maximum vertical height would be approximately 360 feet. Variances for slopes, topsoiling and revegetation are requested for the dump slopes.

The variances are denied for the following reasons:

1. Hydroseeding usually has a maximum reach of 50 to 70 feet. It does not appear practical to hydroseed a 600 foot long slope without benches. Even if complete hydroseeding is possible, significant vegetative growth is very unlikely.

2. Long, steep slopes without benches and without vegetation are very susceptible to erosion.

3. The geotechnical reports indicate that the Mel-Co dump would be unstable in the event of a 5.0 magnitude earthquake at Magna, Utah. According to the text, a 5.2 event occurred at Magna in 1962. Long term mass stability is questionable.

In summary, the Mel-Co dump slopes cannot be reclaimed as proposed. If regrading of the dumps is not practical, we suggest that the following procedures be incorporated into the plan.

a. Place benches on the waste dump slopes. These benches would provide access for hydroseeding, increase mass stability and limit erosion. The benches could also be topsoiled and seeded.

b. Plant containerized stock on the 37 degree slopes.

c. Place portions of the waste material in other areas available for dumping or, reduce the size of the Mel-Co Pit, and thereby, the amount of waste to be disposed of.

d. Mitigate the loss of the surface area to be covered by the dump slopes by enhancing the post mining land use of other areas affected by the mine operation.

Reclamation Plan, General Comments

Please provide any updated information in the form of replacement pages. It is important that any additions or changes be incorporated into all portions of the plan that are affected by the change. Several inconsistencies exist in the current proposed plan and are listed in Attachment A.

Thank you for your cooperation. Please feel free to contact me or my staff should you wish to discuss any of the above items in detail.

Sincerely,

Lowell Braxton
Mineral Resource Development
and Reclamation Program

re
cc: F. Filas
H. Shepherd
W. Hedberg
B. Bayer, JBR
C. Dietz, Water Pollution Control
0833Q-1

ATTACHMENT A

Inconsistencies in Current Proposed Plan.

1. Page 4 - Acreage listed is incorrect

2. Page 5 - Area and volume of soil is incorrect

3. Figures 3.4.1 and 3.4.2 and the corresponding narrative have not been changed to reflect the new pad arrangement shown in Plate 3.

4. Page 104 - The narrative in Section 4.4 is not consistent with revised reclamation commitments.